AMENDMENTS TO THE CLAIMS

1.   (Currently amended) In a communication network that includes a plurality of nodes interconnected by links, the nodes including at least first and second nodes, a method for routing a data flow, comprising:

allocating a respective number of quanta of one or more resources in the network to each of the nodes;

receiving a request at the first node to use a portion of the resources so as to carry the data flow between the first and second nodes over one of a plurality of paths therebetween, each such path comprising a respective sequence of the links; and

in response to the request:

if the resources already allocated to the first node on one of the paths are sufficient, directing the data flow from the first node to the second node over the one of the paths without requesting additional resources; and

if the resources already allocated to the first node are insufficient, performing the following steps:

requesting an increase in an allocation to the first node of the requested resources;

determining, for the links comprised by each of the paths, respective levels of use of the requested resources due to communications in progress over the network;

selecting which of the paths is to carry the data flow responsive to the determined levels of use of the requested resources on the links comprised in each of the paths; and

increasing the allocation of the resources to the first node on the selected path by a predetermined quantum.

2.   (Original) A method according to claim 1, wherein the network comprises an Internet Protocol (IP) network.

3.   (Original) A method according to claim 1, wherein the nodes are interconnected in a ring, and wherein the plurality of paths comprises a first path traversing the ring in one direction and a second path traversing the ring in the opposite direction, and wherein selecting which of the paths is to carry the data flow comprises selecting the first or the second path.

4.   (Original) A method according to claim 3, wherein selecting the first or the second path comprises conveying the data flow over an inner or outer data link ring within the network provided by a Spatial Reuse Protocol (SRP).

5.   (Original) A method according to claim 1, wherein the one or more resources comprise a link bandwidth.

6.   (Original) A method according to claim 1, wherein the one or more resources comprise a processing power associated with each of the links.

7.   (Original) A method according to claim 1, wherein selecting which of the paths is to carry the data flow comprises comparing an amount of the one or more resources requested to a resource budget assigned to the first node, and permitting the data flow only if allocating the requested resources will not cause a total of the resources allocated to the first node to exceed the budget.

8.   (Original) A method according to claim 7, wherein comparing the amount of the one or more resources comprises comparing the amount of each of the resources requested to the resource budget assigned for each of the resources, and wherein permitting the data flow comprises permitting the flow only if all of the resources requested for at least one of the paths are within the budget.

9.   (Canceled)

10.   (Original) A method according to claim 1, wherein selecting which of the paths is to carry the data comprises verifying that a sufficient amount of the requested resources is available to carry the data flow on every one of the links comprised in the selected path.

11.   (Original) A method according to claim 1, wherein selecting which of the paths is to carry the data flow comprises selecting the one of the paths having the lowest level of a predetermined measure of use of the requested resources.

12.   (Canceled)

13.   (Original) A method according to claim 1, wherein receiving the request comprises choosing a dispatcher within the network to manage allocation of the resources, wherein the dispatcher receives and processes the request.

14.   (Original) A method according to claim 13, wherein choosing the dispatcher comprises choosing one of the nodes to act as the dispatcher.

15-24. (Canceled)

25. (Previously presented) A network according to claim 31, wherein the dispatcher is adapted to select for carrying the data flow the one of the paths that has the lowest level of a predetermined measure of use of the requested resources.

26. (Original) A network according to claim 25, wherein the measure of use comprises, for each of at least two of the paths, a maximum level of use of at least one of the requested resources, taken over all of the links comprised in the paths.

27-28. (Canceled)

29. (Previously presented) A method according to claim 13, wherein requesting the increase in the allocation comprises requesting and receiving the allocation from the dispatcher.

30. (Previously presented) A method according to claim 1, and comprising, upon release of the requested resources:

comparing an amount of the resources that have been released to a predetermined threshold; and

if the amount is greater than the predetermined threshold, deallocating the predetermined quantum from the first node.

31. (Currently amended) A communication network, comprising:

a plurality of nodes, comprising at least first and second nodes;

a plurality of links, interconnecting the nodes to provide communications therebetween; and

a dispatcher, which is adapted to allocate a respective number of quanta of one or more resources in the network to each of the nodes,

wherein the first node is adapted, upon receiving a request to use a portion of the resources so as to carry the data flow between the first and second nodes over one of a plurality of paths therebetween, each such path comprising a respective sequence of the links, to direct the data flow from the first node to the second node over one of the paths without requesting additional resources if the resources already allocated to the first node on the one of the paths are sufficient, and to request an increase in an allocation of the requested resources to the first node if the resources already allocated to the first node are insufficient, and

wherein in response to the increase requested by the first node, the dispatcher is adapted to determine, for the links comprised in each of the paths, respective levels of use of the requested resources due to communications in progress over the network and to select which of the paths is to carry the data flow responsive to the determined levels of use of the requested resources on the links comprised in each of the paths, and to increase the allocation of the resources to the first node on the selected path by a predetermined quantum.

32.   (Currently amended) A network according to ~~claim 30~~ claim 31, wherein the first node is adapted, upon release of the requested resources, to compare an amount of the resources that have been released to a predetermined threshold, and if the amount is greater than the predetermined threshold, to deallocate the predetermined quantum from the first node.